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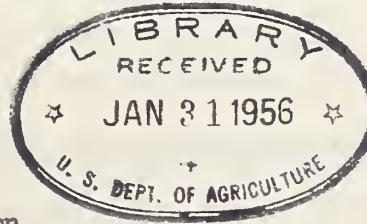
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UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

THE EFFECTIVENESS OF LARGER UNIT CONTAINERS AND  
NEW TIMES OF SERVICE AS METHODS OF INCREASING  
SCHOOL MILK CONSUMPTION IN SYRACUSE, NEW YORK

This report summarizes the findings and conclusions of one in a series of studies of the Special School Milk Program undertaken by State educational agencies in cooperation with the United States Department of Agriculture, Agricultural Marketing Service. Funds to conduct these studies were made available by the Commodity Credit Corporation to permit the appraisal and development of new and more effective methods of increasing the availability and consumption of milk in schools.

The study was undertaken by the New York State Education Department in the fiscal year 1955. Supervising the study was Miss Dorothy S. Lawson, Chief, Bureau of Home Economics Education, New York State Education Department. Immediately in charge of the study was Mrs. Laura Shafer, Research Analyst. Mrs. Grace Saunders, Supervisor of School Lunchroom Department, Syracuse Board of Education, served as Consultant. The statistician for the project was Mrs. Hazel Manzer.



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THE EFFECTIVENESS OF LARGER UNIT CONTAINERS AND  
NEW TIMES OF SERVICE AS METHODS OF INCREASING  
SCHOOL MILK CONSUMPTION IN SYRACUSE, NEW YORK

Purpose of Study

The purpose of the study was to determine the effect of offering third-quarts in place of half pints at the same price in the lunch program and introducing new times of service as methods of increasing school milk consumption.

The study was divided into three parts:

Part I. The Effect of Container Size on Milk Consumption.

Part II. The Effect of New Times of Service on Milk Consumption.

Part III. The Effect of Container Size and New Times of Service  
on Sales of Type A Lunches.

There was also an analysis made to measure seasonal trends as they affect the milk consumption pattern.

Procedure for Conduct of Study

Records of all schools in the Syracuse Public School System were examined to measure changes in milk consumption for the school years 1953-54 and 1954-55.

There are 46 public schools in Syracuse, with an enrollment of 27,647. Nine of these schools are high schools and junior high schools, all with cafeterias, and 37 are elementary schools, 7 of which had cafeterias.

A study was made of two changes in the service of milk in Syracuse schools. The first was the introduction of third-quart containers at noon, replacing the service of half pints in the 16 schools with cafeterias. This was done at no increase in cost to the students.

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The second was the introduction of a uniform mid-morning milk break in 28 elementary schools and an expansion of operations in 9 elementary schools which had previously served mid-morning milk. In an effort to make record-keeping and accounting as simple as possible and to emphasize broad participation, only one half pint was offered in mid-morning. Therefore, per capita consumption and percent participation are identical in this phase of the study. Milk was priced at 10 cents a week for one half pint each school day. As of June 6, the price was reduced to 5 cents each week.

The principal analytical method used in this study is comparison of consumption during the period studied with a "base." The base used was the average daily consumption of milk by children in half pints for the two months of January and April 1954.

#### General Conclusions

1. A combination of factors introduced into the Syracuse system resulted in an increase in daily consumption of milk per child from .24 half pint to .79 half pint. Among the significant contributing factors were: (a) Substitution of the one-third quart for the half pint in 16 cafeterias at no increase in meal price; (b) Introduction of mid-morning milk service in 28 elementary schools and expansion of such service in 9 elementary schools previously serving mid-morning milk; (c) offering mid-morning milk at 10 cents per child per week; (d) simplified record-keeping; and (e) outstanding cooperation among all groups concerned with the program.

2. The one-third quart in lieu of the half pint contributed to an increase in milk consumption at lunch time which varied between 38 percent and 54 percent on a weekly basis.

3. The expansion of the mid-morning program (including price reductions) achieved milk consumption over 20 times the level during the base period. In those schools which had previous mid-morning milk service, consumption increased by more than 300 percent.

4. The additional milk consumption achieved in Syracuse by participating schools amounted to an average of some 840 gallons of milk daily. This figure was ascertained by combining the daily average increase over base for the lunch program and the mid-morning milk program.

Part I. The Effect of Container Size on Milk Consumption.

In December 1954, Syracuse hoped to encourage increased milk consumption under the SSMP by offering a second half pint for four cents in the cafeterias at noon, compared with five cents for the first half pint. The results were considered unsatisfactory because consumption increased only 6 percent over the previous year (base) and was actually 3 percent lower than in September, October and November of the same school year.

In an effort to increase consumption and to spread the benefits of the program, half pint servings were replaced by one-third quarts at no increase in cost in the lunch program on January 3, 1955. As a result of this, each serving contained 33 percent more milk.

The first week of one-third quart service produced an increase of 46 percent (in half pint equivalent) over the base. Consumption continued to increase until March 7, then declined, but never dropped below 38 percent above the base. The 46 percent increase in consumption during the first week could be attributed to: (1) Increased size of container, 33 percent; (2) Increase in number of servings, 13 percent.

Part II. The Effect of New Times of Service on Milk Consumption. 1/

There are 37 elementary schools (kindergarten through the sixth grade) in the Syracuse public school system. Prior to March 7, 1955, milk was available in nine of these schools at mid-morning. The price to the pupil was seven or eight cents per half pint. Total consumption in the nine schools was only 542 half pints daily. In seven of the remaining 28 schools, milk was available at noon in the cafeterias. This part of the operation was included in Part I of the report.

On March 7, 1955, a uniform mid-morning milk service was established in all 37 elementary schools at 10 cents per week, payable in advance, for one half pint per day.

The 542 half pints per day consumed prior to the start of the new service increased to a daily average of 11,442 half pints per day for the following 14 weeks. This represents an increase in mid-morning consumption of 2,011 percent. Weekly data is shown in Table I.

Table I. Analysis Mid-Morning Milk Program.

Week Beginning	: Number Consumed Daily	: No. Pupils Attending School Daily Averaged Over 5-Week Period a/	: Percent Participation
March 7, 1955	11,693	(ADA)	
March 14, 1955	11,330		
March 21, 1955	11,906		
March 28, 1955	12,149	16,516	73
April 4, 1955	11,904		
April 18, 1955	10,608		
April 25, 1955	11,206		
May 2, 1955	11,202	16,788	66
May 9, 1955	10,987		
May 16, 1955	11,136		
May 23, 1955	10,887		Attendance figures
May 30, 1955	10,450		not available at time
June 6, 1955	12,189		report was prepared.
June 13, 1955	11,544		

a/ Attendance records, Syracuse Board of Education.

1/ In evaluating the effectiveness of this new time of service, it must be noted that the low price level established undoubtedly contributed significantly to the increases in consumption.

Even in the nine schools where mid-morning milk was available prior to March 7, consumption increased substantially after that date, probably largely as a result of the drop in price from 35 or 40 cents a week to 10 cents. The average daily consumption jumped from 542 to 2,265 half pints, an increase of 318 percent.

Participation increased from 3 percent of the elementary school attendance before March 7, to an average daily participation of 75 percent in the five weeks following March 7. Participation then dropped off to 66 percent for five weeks, but rose again when the price was reduced to 5 cents per week, effective June 6. No attendance figures were available at the time the report was written to measure participation in the final weeks of the school year, but it was estimated to exceed 70 percent.

The report notes that in seven elementary schools located in low-income areas, only seven bottles of milk per day were consumed prior to March 7 -- a participation of one-tenth of one percent. The dime-a-week mid-morning milk program increased participation to 73 percent for the five weeks following March 7, and 66 percent in the next five weeks. This is the identical pattern followed by the school system as a whole.

Free milk was served undernourished children for the first 12 weeks of the program. This amounted to a total of 12,303 half pints.

Simplified record-keeping contributed significantly to encouraging faculty support of the program. Each teacher filled out a weekly report listing the children who were to get milk, the amount collected and the attendance record (only absences were to be noted). Each day the teacher noted absences and sent a "Daily Request Form" to the supply point indicating the school room, date, number of half pints needed and the teacher's

signature. On the basis of these reports, the school prepared a form indicating the name of the teacher, the amount of milk ordered and the amount of money collected. (Both these figures were necessary because milk was offered free to children unable to pay for it and the charge to teachers was 35 cents per week.) The principal's office received collections from the classroom teachers, filed the collection envelopes and placed cash in bank deposit bags without verifying the cash except on a spot check basis. The total collected was computed from teacher reports and bank deposit slips prepared (quadruplicate). Two copies were placed in a deposit bag, one copy to the collector, and one copy (receipted by the collector) was retained in the school files. The school then totaled the amount ordered and ascertained the amount of unconsumed milk on hand. The supplier was then notified to send the total of the amount ordered for each of the next five days after allowance on the first day for the amount on hand (generally due to absences of children from school). Each Friday the school sent to the central office the teacher's record forms, the principal's record forms, one copy of daily delivery slips, and the daily room request slips. The central office then assumed all responsibility for reconciliation of records, etc. Experience indicated that overages and underages were nominal.

The outstanding cooperation achieved in Syracuse had a significant bearing on the success of the mid-morning milk program. In this connection the report says:

"This was accomplished by a well-planned effort that included meetings of all elementary school principals conducted by the superintendent of schools; committee meetings, staff conferences, supplier contacts, development of procedures and forms, arrangements for publicity and development of a complete accounting procedure all under the direction of Mrs. Saunders." (The latter is the city supervisor of lunchrooms.)

Part III. The Effect of Container Size and New Times of Service on 1  
Sales of Type A Lunches.

With the replacement of half pints by third-quarts in January, there was no noticeable change in the percentage of children taking the Type A lunch. Table II indicates that the fluctuations in the percentage of children participating in the lunch program amounted to only two percentage points throughout the school year.

Table II. Percentage of Students Eating Type "A" Lunch in All Cafeterias.

(Based on attendance records, Syracuse Board of Education)

<u>Five Week Period Ending</u>	<u>Percent Participation</u>
October 15, 1954	14
November 19, 1954	14
December 23, 1954	16
January 28, 1955	14
March 4, 1955	15
April 15, 1955	14
May 20, 1955	14

In seven of the elementary schools with cafeterias, mid-morning milk service was introduced as of March 7, 1955. The report stated that there was no noticeable change in the percentage of children taking the Type "A" lunch as a result of this mid-morning service.

